

Reponses to Stakeholders Comments
On the
Characterization Report for the 903 Drum Storage Area, 903 Lip Area, and Americium Zone
(Received July 19, 2000)

What is the Americium Zone?

During drum storage, removal and cleanup activities associated with the 903 Drum Storage Site, wind and rain redistributed americium- and plutonium-contaminated soils beyond the present day 903 Pad. Contaminated soil was redistributed primarily to the south and east. The area receiving the most contamination from redistributed soils, the 903 Lip Area, is located immediately adjacent of the 903 Pad. This area was covered with approximately 6-inches of soil to prevent redistribution of contaminated surface soils. Land areas east of the 903 Lip Area were also impacted and have not undergone remedial action. Surface soils are contaminated with americium and plutonium in this area. Therefore, as stated in Section 1.1 of the Characterization Report for the 903 Drum Storage Area, 903 Lip Area, and Americium Zone ^{239/240}Pu and ²⁴¹Am activities east and Southeast of the Lip Area are known as the Americium Zone". The origin of the names for the "Lip Area" and "Americium Zone" are unknown, reference general geographic areas, and have no reference to specific contamination levels.

How were soil samples collected?

Soil samples were collected in support of the subsurface soil investigations. Two subsurface soil characterization programs were implemented; the radiological investigation and the volatile organic compound (VOC) investigation. Section 2.3.1, Radiological Investigation, provides information on how soil samples were collected for the radiological investigation. Section 2.3.2, VOC Investigation Boreholes, provides a description on how soil samples were collected to determine organic contamination in subsurface soils.

In general, a tube was driven into the ground and the recovered core was extracted from the tube. The extracted core material was placed into sample jars from selected interval below the ground surface (or top of asphalt). Example: soils recovered from the 0-6 inch, 6-12 inch, 12-18inch, and 18-24 inch intervals are placed into separate sample containers. Sample containers are shipped to contracted analytical laboratories.

Were soil samples mixed?

Sample jars submitted to the analytical laboratory for analysis contained soil materials collected from 6-inch intervals. Laboratory standard operating procedures require drying and homogenization (mixing) of the sample prior to collecting a subsample (approximately 2 grams) for analysis by analytical instrumentation. This methodology is consistent with the approved sampling and analysis plan to characterize natural soils in 6-inch intervals. Homogenization of the sample ensures that the subsample collected for analysis represents the average concentration of the soil horizon sampled.

To what depth were subsurface soil samples collected?

Radiological Investigation

Subsurface soil samples were collected to 3 feet below the top of asphalt at the 903 Pad and 2 feet in depth below the top of ground surface in the 903 Lip Area. No exceedance of RFCA Tier II action levels were encounter in samples collected in the 18- to 24-inch intervals from beneath the 903 Pad or in the Lip Area.

VOC Investigation

Samples were collected at 4-foot intervals until bedrock was encountered 16.0 to 24.0 feet below ground surface.

Where were soil samples collected?

Radiological Investigation

Figure 2-13 of the Characterization Report provides the location of boreholes completed in support of the Radiological Investigation.

VOC Investigation

Figure 2-14 of the Characterization Report provides the location of boreholes completed in support of the VOC Investigation.

Where were high measurements found?

Figures 4-2 through 4-19 of the Characterization Report present results of laboratory analysis of soil samples. For example, Figure 4-8 provides isoactivities of $^{239/240}\text{Pu}$ which shows the location of the highest $^{239/240}\text{Pu}$ detected in soils (152,260 pCi/g in Borehole 91598). However, it can also be seen in this figure that $^{239/240}\text{Pu}$ activities of this magnitude are limited to this location, adjacent boreholes show significantly lower $^{239/240}\text{Pu}$ activities at this depth interval.

What are the results of asphalt samples?

Figure 4-15 of the Characterization Report presents analytical results of the laboratory analysis of asphalt samples. Analytical results were not compared to RSALs because the asphalt is not considered soil. Although all options will be considered, it is anticipated that the asphalt will be removed and managed as waste.

How will asphalt be treated?

The CERCLA process requires the preparation of a decision document presenting remedial alternatives for cleanup of a contaminated area. The disposition of the asphalt will be determined during the feasibility study and presented in the decision document.

Why are there conflicting estimates on the volume of soil requiring action?

The Characterization Report for the 903 Drum Storage Area, 903 Lip Area, and Americium Zone Rev.1 dated June 26, 2000 presents final volume estimates for both Tier I and Tier II exceedance in Tables 5-5 and 5-6, respectively. Differences in previous volume estimates may be based on units presented (yd^3 vs. m^3) and/or preliminary estimates vs. earlier revisions of the characterization report.

What is the confidence in cost estimates provided in the Remediation Costs vs. Plutonium-239/240 Cleanup Level table?

Cleanup costs are based on the area requiring action. Estimates for areas exceeding Tier I ($>651 \text{ pCi/g}$) and Tier II ($>115 \text{ pCi/g}$) are well defined based on the density of boreholes completed in support of the recent 903 Pad characterization effort. Consequently, there is a relatively high confidence on costs associated with Tier I and Tier II remedial actions. Areas below Tier II action levels ($<115 \text{ pCi/g}$) were determined by the kriging (statistical analysis) of data points with much greater spacing than those completed for the recent characterization and, therefore, resulting in a lower confidence in the associated remedial costs.

Point of Contact

Steve Paris, RMRS, 303-966-3656